DEVELOPMENT OF A DRIVER LICENSE APPLICATION MANAGEMENT INFORMATION SYSTEM

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13. ABSTRACT (Maximum 200 words)

This project investigated the possibility of developing a conceptual off-line management information system that would contain selected driver licensing information from the Driver License (DL) Master File and, if feasible, from field office electronic databases and possibly existing aggregate-level statistical reports. If developed, the database would be reflective of the statewide driver licensing program, containing data on all, or a large random sample of, licensing process activity throughout the state. The proposed database would be able to provide descriptive measures and statistical data related to the driver licensing process.

In the event that departmental management decides to proceed with implementation of the proposed database, funding from the California Office of Traffic Safety would need to be requested and provided for the next stage, Stage II, of the project. The implementation schedule for Stage II is provided in this report. Specifically, Stage II will involve the creation of a prototype DL Application Management Information System Database, which will include collecting actual application data and producing trial information and example statistical reports as a demonstration and validation of the prototype system.

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PREFACE

This report is the final product of a project entitled *Development of a Driver License Application Management Information System*. This project was funded by the National Highway Traffic Safety Administration through the California Office of Traffic Safety (Project Number TR0014).

This report includes information and advice provided by many individuals. Although the author attempted to represent their inputs as accurately as possible, some details may not be fully presented or stated in the context or form originally provided. The opinions, findings, and conclusions expressed in this report are those of the department's Research and Development Branch and not necessarily those of the State of California or the National Highway Traffic Safety Administration.

ACKNOWLEDGMENTS

The author wishes to acknowledge with appreciation the many individuals who contributed to this project.

The study was conducted under the general direction of Cliff Helander, Research Chief, and the supervision of Robert Hagge, Research Manager. The project was originally conceived by Raymond C. Peck, retired Research Chief. Michelle Meadows of the Office of Traffic Safety was very helpful in guiding the project's grant process. Appreciation goes to Douglas Luong, Staff Services Analyst, for his help in producing and distributing the surveys and for typing the drafts of this report. Debbie McKenzie, Associate Government Program Analyst, provided valuable assistance in proofreading and producing the final draft of this report.

The project was guided in part by an advisory committee of individuals selected to represent various traffic safety interests within the California Department of Motor Vehicles. Committee members are thanked for their generous and insightful responses in both project surveys and various discussions: Carol Barry, David Hennessy, Larry Hidalgo, Mary Janke, Kathy Keers, Anita Lopez, Scott Masten, Julie Montoya, John Nelson, John Rooney, Andy Simpson, Sandy Waters, and Darlene Wheeler.

EXECUTIVE SUMMARY

Background
This project investigated the possibility of developing a conceptual off-line management information system that would contain selected driver licensing information extracted from the DL Master File and, if feasible, from field office electronic databases. The proposed database would be reflective of the statewide driver licensing program, containing data on all, or a large random sample of, licensing process activity throughout the state.

Driver license application process data are captured whenever an application is initiated in one of the department's field offices. Field offices throughout the state electronically transmit to the department's Driver License (DL) Master File a variety of data on individual applications still pending at the end of the business day. These data are stored in the DL Pending Application Subrecord in the DL Master File. This subrecord is updated at various times during the application process (e.g., following failure of a drive test). If an application is rejected after a three-time test failure and another application is filed, new information pertaining to the processing of the latter application overwrites the prior application information on the DL Pending Application Subrecord.

Because data on the Pending-DL Application Subrecord are available only for an application in progress, it is not possible with the current system and data extraction programs to track an individual over multiple license applications or to obtain test results and other application process information for activity occurring on the same day of license issuance. The transitory nature of these data limits the usefulness of the DL file for estimating test fail rates, determining the total number of tests of each type that individuals have taken before licensure, and other licensing process measures that would have value to departmental administrators and traffic safety researchers. A system that would capture the data before they are purged is needed to provide a complete picture of what happens to applicants as they progress, possibly over multiple applications, through the licensing process from beginning to end.

Capturing driver licensing process information directly from the DL Master File and electronic field office application databases before they are purged would be a much more cost effective and efficient way to obtain the desired information. These data would be very useful in a wide variety of applications including longitudinal systems, monitoring of driver license programs, monitoring driver competency levels, monitoring and auditing driver licensing operations, and estimating workloads. The creation of such a proposed database would, therefore, result in improvements in safety and management by providing information that is critical to the identification of problems and in initiating system improvements.

Methods
The project was guided by an advisory committee consisting of representative from a number of divisions within the department through the use of two surveys.

The first survey provided the advisory committee with a description of information being considered for inclusion in the proposed system database. Committee members were asked to rate the value of the separate data elements and to identify any additional data sources they believed should be investigated and considered for inclusion in the proposed management information system.

The second survey of the advisory committee members summarized the results obtained from the first survey, proposed a set of data elements to be included in the DL application MIS and two alternative database designs, and then inquired about the potential usefulness of the proposed data and system designs.

Results
Input provided by the advisory committee identified driver license process information on the department's DL Master File and from other sources that might be of value to potential users. Based on the survey responses, it was determined that capturing the desired data was feasible. The committee provided recommendations on the desired characteristics of the management information system, the data format and file structure, index methods, and other necessary features of the database.

A broad outline of the tasks and task schedule for the next stage of the project development was specified. The resources to place the prototype system into operation will be determined in a follow-up project.

Conclusions and Recommendations
Based on input provided by the advisory committee and other considerations, it is recommended that the department pursue the usefulness of the system (Stage II of the DL Application MIS Database development project). Stage II would create a prototype DL application MIS system with the design features of either a relational or hierarchical database and collect actual application data and produce trial information and example statistical reports to demonstrate and validate the data system. Input that would help evaluate the usefulness of the system would be solicited from traffic safety researchers, professionals, and department management.

Funding from the California Office of Traffic Safety has been requested in order to conduct Stage II of the DL Application MIS Database project. An implementation schedule for this Stage II effort is included in this report.

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INTRODUCTION

Background
The California Department of Motor Vehicle's Research and Development Branch (R&D) uses data from a variety of sources for its research projects. These sources include the department's driver license (DL) and vehicle registration (VR) automated record systems, California Highway Patrol's Statewide Integrated Traffic Record Systems (SWITRS), National Highway Traffic Safety Administration's (NHTSA's) Fatality Analysis Reporting System (FARS), and ad hoc sources such as process datasets from Department of Motor Vehicles (DMV) field offices, justice records from local courts, hospital patient records, and crash reports from other states.

The department's automated DL Master File database is the primary data resource used by R&D for conducting traffic safety research. This database contains driving-history records for over 20 million drivers, including information on crash involvements, traffic law violations, licensing actions, and driver biographical characteristics. R&D maintains an off-line database containing a 1% random sample of driver records extracted from this system for research purposes, such as developing longitudinal and cross-sectional profiles of the California driver population and high-risk driver groups. It has also developed several standardized software programs that reformat data extracted from the DL file into a form that makes them useful for traffic safety research studies. For example, the software programs create counts of traffic crashes, citations, and other driving incidents occurring within specified time periods for use in crash risk modeling and program impact studies.

Application process data are subject to being captured each time a driver license application is initiated in a DMV field office (as opposed to renewal by mail). Field offices throughout the state electronically transmit to the DL Master File a variety of data on individual applications that are still in process (pending) at the end of the business day. These data are stored in a DL Pending Application Subrecord in the DL file, which is updated at various times during the application process (e.g., following failure of a drive test). If an application is disapproved or rejected (e.g., three-time test failure) and another application is filed, new information pertaining to the processing of the latter application overwrites the prior application information on the DL Pending Application Subrecord (provided the application is not completed on the same day that it is filed, in which case the pending subrecord gets erased).

The subrecord includes pass/fail data on results for up to three attempts each on the written or oral driver knowledge tests, words and phrases (traffic signs) test, and drive test. It also contains results for tests translated in several different languages. The drive test date and examiner identification number are also included. In addition, the Basic Record in the DL Master File contains some categories of drive test results, a "satisfactory" vision test result indicator, an oral law test result indicator, and a "waived" law test indicator.

Problem Statement
Because data on the Pending-DL Application Subrecord are available only for an application in progress, it is not possible with the current system and data extraction programs to track an individual over multiple license applications or to obtain test

results and other application process information for activity occurring on the same day of license issuance. The transitory nature of these data limits the usefulness of the DL file for estimating test fail rates, determining the total number of tests of each type that individuals have taken before licensure, and other licensing process measures that would have value to departmental administrators and traffic safety researchers. A system that would capture the data before they are purged for all, or a sample of, the applicant population is needed to provide a complete picture of what happens to applicants as they progress, possibly over multiple applications, through the licensing process from beginning to end.

Currently, when a need for descriptive data on the application process arises, a special study often must be conducted involving the manual collection of data from field offices statewide. For example, to estimate written test fail rates by form and attempt number, it is necessary to collect completed hardcopy test forms from all or a sample of offices. Manual data collection is very costly and disruptive to normal operations and, in some cases, can lead to longer customer wait times.

Capturing driver licensing process information directly from the DL Master File and electronic field office application databases before they are purged would be a much more cost effective and efficient way to obtain the desired information. These data would be very useful in a wide variety of applications, including those listed below.

- *Longitudinal monitoring of driver license programs.* Data on application disapprovals, rejects, test failures, and average wait times between initial application, testing, retesting, possible additional applications, and licensure would be useful for performing efficiency and effectiveness evaluations of licensing programs like teen graduated licensing, delegated (third-party) drive testing by private driver training schools, and enhanced knowledge and drive tests. Such data would also be valuable in developing and implementing new licensing policy and programs, for example, establishing guidelines and procedures for limiting the number of drive test failures allowed before revoking the driving privilege or requiring formal driver training. The information would also make it possible to determine the demographic characteristics and geographic locality of drivers whose applications are disapproved or rejected for the purposes of developing educational program and materials targeting specific driver groups.

- *Monitoring of driver competency levels.* The test performance data could be used to more efficiently monitor changes in the level of knowledge and skill competency in the driver population following implementation of enhancements to the department's driver competency program.

- *Monitoring and auditing of driver licensing operations.* For example, test results data could be used to identify individual examiners in each field office who pass a much higher (or lower) percentage of Class C license applicants than would be expected if the examiner were following standard testing protocol. Such examiners could be counseled and perhaps offered refresher driver test training. The database system could also be used as a basis for a higher-level statistical quality control system that would detect offices in which selected indices (e.g., drive test fail rate) suddenly

deviated greatly from within-office historical patterns, indicating a possible deviation from testing policy by field office management.

• *Estimating workload.* Various process measures that have a direct relationship to workload (e.g., test fail rate, retest volumes, and in-person renewal rates) could be monitored and used for estimating staffing and resource allocation requirements.

The creation of such a proposed database would, therefore, result in improvements in safety and management by providing information that is critical to the identification of problems and in initiating system improvements.

Solution Statement

This project investigated the possibility of developing a conceptual off-line management information system that would contain selected driver licensing information extracted from the DL Master File and, if feasible, from field office electronic databases and possibly existing aggregate-level statistical reports (e.g., the department's monthly DL Transactions Report and DL Activities Report). The database would be reflective of the statewide driver licensing program, containing data on all, or a large random sample of, licensing process activity throughout the state.

Project Goal and Objectives

The degree to which the purposes of this project are achieved is evidenced by how well the project goal and objectives were met. The project goal and each objective are presented below.

Project goal. The goal of the project is to research a management information system design that will provide descriptive measures and statistical data related to the driver licensing process. If implemented, the system will be able to provide data for study purposes such as evaluation of drivers licensing programs, driver competency, and monitoring driver licensing operations.

Project objectives. Project objectives are the steps that need to be taken to meet the project goal. For this project, the objectives consisted of the following:

1. Review existing database literature and the department's operational files, including procedures for their creation and modification.

2. Identify driver license process information on the department's DL Master File and other available sources that may be of value to key users (management, R&D, licensing personnel, etc.).

3. Evaluate the feasibility of capturing the desired data.

4. Determine the desired characteristics of the management information system, the data format and file structure, index methods, and other necessary features of the database, and also whether the database should contain all or only a sample of available data.

5. Determine the general data processing requirements for capturing, processing, and formatting the data, creating the file structure, and performing other necessary system functions.

6. Develop a general task and resource schedule that would support actual development and implementation of the conceptualized system.

7. Determine the acceptability of the conceptualized system to departmental management.

8. Prepare a report documenting the work products completed pursuant to project objectives and recommending whether to further develop and implement a prototype of the conceptualized system.

Operational Phases
This project involved the following six phases:

Phase I – Program preparation. The department's DL database system and prior research literature in the area of database development were reviewed for information applicable to this project.

Phase II – Determine data needs, identify data sources, and determine database contents. A sample of licensing and traffic safety administrators and other likely end users of the database were surveyed to determine what types and formats of license process data would be of value to them. Each survey participant was sent a list of data elements currently available on the Pending Application Subrecord of the DL Master File. Respondents were asked to rate the potential usefulness of the data items and to identify any additional information available from other sources that they would like to have included in the system.

Phase III – Determine system configuration and data processing requirements. Alternative system configurations and data structures were evaluated, and an optimal solution was selected and developed. A determination was also made of the requirements and computer software tools for processing (e.g., matching, cleaning, formatting) the data elements extracted from the source database, creating the desired file configuration, generating output reports, and performing other system functions.

Phase IV – Evaluate user acceptability of proposed database. The likely users of the system surveyed in Phase I were sent a list of the final set of data elements to be included in the system and an outline of the proposed design emanating from the second phase of this project. Each respondent was asked to evaluate the potential usefulness of the system to them and others involved in traffic safety programs and research.

Phase V – Develop system implementation schedule. Tasks necessary to design, create, implement, debug, and evaluate a prototype of the conceptualized system were determined. The personnel, hardware, and software resources necessary to implement the operation of the prototype system and to produce example statistical reports were estimated.

Phase VI – Report preparation. A final report (this one) was produced that documents the work products completed during Phases I – V of this project. The report contains conclusions and recommendations as to whether a prototype system should be developed and implemented.

METHODS

Advisory Committee

A DL Application Management Information System Advisory Committee was formed consisting of representatives from several divisions within the department. Members of the committee were selected based on their level of expertise in the areas of pre-licensing policy, post-licensing policy, driver safety hearings, traffic safety research, driver license issuance, fraud investigation, justice and government liaison, field office operations, database design architecture, and computer programming of the department's automated DL Master File. Thirteen individuals from the various divisions were offered, and accepted, invitations to serve on the committee. These individuals represented the following offices within the department:

- Post-Licensing Policy
- Pre-Licensing Policy
- DL System Design Group
- Justice and Government Liaison
- Audits and Investigations
- Driver Safety Appeals
- Design Architect
- Research and Development
- Field Office Program Support

The advisory committee was administered two survey questionnaires. The responses were used to determine data needs, identify available data sources, and determine the contents of the proposed system. Survey responses were also used as a guide in creating an array of possible system designs and in selecting the most valuable data items to be included in the proposed database.

First Survey

The first survey provided the advisory committee with a description of information being considered for inclusion in the proposed system database. This information resides in the DL Pending Application Subrecord contained within the DL Master File. Appendix A describes the information available on the DL Pending Application Subrecord.

Committee members were asked to rate the value of the separate data elements and to identify any additional data sources they believed should be considered for inclusion in the proposed management information system. The full text of the first survey is presented in Appendix B. The survey consisted of the following five parts:

Part I – Determining data usefulness. Respondents were requested to indicate whether the items on the DL Pending Application Subrecord would have major, moderate, minor, or no value to the department for traffic safety research, licensing program administration, or resource allocation. Respondents were also asked to provide input on any problems of which they were aware in the accuracy and completeness of the items.

Part II – Feasibility of capturing the desired data. This section queried committee members' opinions on the general data processing and programming requirements for capturing and storing the complete DL Pending Application Subrecord.

Part III – Other data items and systems. This part of the survey asked respondents to identify any other driver license process information on the Driver License Master File or on other available electronic or hard copy sources that might be of value to include in the proposed database or that might be available as a supplement to the database information.

Part IV – Utility and value. Respondents were asked to comment on the increased utility and value that the proposed DL Application MIS would provide in several different application areas.

Part V – Comments. This section asked respondents to provide any additional opinions or insights on the proposed MIS database.

Second Survey
The second survey presented to the advisory committee members the results obtained from the first survey, a proposed set of data elements to be included in the DL application MIS, and two alternative database designs, and then questioned them about the usefulness of the proposed data and system designs. The complete text of the second survey is presented in Appendix C.

The second survey consisted of the following three parts:

Part I – Summary of first survey. This section summarized the committee's earlier inputs on the usefulness of data elements, other data items, and systems that should be explored in the project, organization of data in the proposed database, and the likely utility and value of the system.

Part II – Proposed organizational design. Committee members were presented with two proposed system designs.   This section of the survey included a description of the data contents, file structure, time periods of longitudinal driver license application histories, and user-based database documentation.

Part III – Survey questions. Respondents were asked to comment on their preferences between the two database design options and to comment on the likely value of each system alternative to themselves and other traffic safety interests. Committee members were invited to comment on interests that would be generated from merging application data with prior and subsequent driver record histories (i.e., crashes, citations, etc.). Members were also asked to provide input on whether the collection of

only a sample of applicants would negatively impact any potential usefulness of the data.

Investigation of Other Data Systems
The California Department of Motor Vehicle's Division of Investigations and Audits has recently developed a database that enables departmental auditors and investigators to have direct access to journalized data on driver license transactions used in conducting investigations and audits. The benefits of this database include a quantifiable increase in detection of potentially fraudulent licensing activities and a measurable improvement in staff efficiency associated with audit activity. This database and the method in which it was created were investigated in this project for its possible applicability to conceptualizing a design for the DL process database for the present effort.

RESULTS

First Survey
Part I – Determining data usefulness. In this section of the survey questionnaire the advisory committee members were asked to assess and rate the potential usefulness of the individual variables from the DL Pending Application Subrecord. Respondents indicated that most of the variables would be useful for traffic safety research, licensing program administration, and resource allocation.

Part II – Feasibility of capturing the desired data. The majority of the respondents said that the DL Pending Application Subrecord contains all of the necessary information to obtain a complete history of the field office license issuance activity but that this historical information is purged when a driver is issued a permanent driver license or when a new application is started. Several respondents indicated that retaining prior application data, such as the number of failed driving tests, would assist field office staff in determining whether action should be taken against the customer's driving privilege. In addition, several members stated that capturing and storing these data would aid in fraud investigations as well as in communicating to courts the expiration status of a temporary driver license.

Regarding the general processing and programming requirements, the consensus of the respondents was that capturing and storing the data in an "off-line" dataset is very achievable. Currently, data on the entire DL application transaction are stored offsite in a data warehouse at the Stephen P. Teale Data Center in Sacramento. The information contained in the data warehouse is used to create the DL Pending Application Subrecord on the DL Master File. Two viable options for capturing and storing data from the data warehouse or the DL Master File emerged from comments made by some of the respondents.

The first option is to use the existing daily journals kept at the DMV field offices. The daily journal system records data (e.g., builds a new DL record or updates an existing DL record) for every original and renewal DL transaction that occurs in the field office

using a Series 1 or RS6000 computer terminal.[1] Following completion of a transaction, information on the transaction is written to the DL Pending Application Subrecord. One journal record is created for each transaction. The transaction information from the daily journals could be copied and stored off-line for use in constructing the DL Application MIS Database.

The second option is to utilize an imaging process to extract data directly from the DL Master File. This option would produce an off-line record for a driver each time a DL Pending Application Subrecord is created. Subsequent application transactions would be written to the off-line dataset when the imaging process detects a change (i.e., modification/completion of the existing application or creation of a second or subsequent application) in any segment of the DL Master's Pending Application Subrecord.

Several respondents suggested potential database models. One possible model suggested is a hierarchical database. The hierarchical database would contain for each applicant a header record (data identifying the individual driver) and at least one detail record (one for each application transaction). Each record in the hierarchical dataset would contain an indicator code that would identify whether it is a header record or a detail record. A second possible model suggested is a relational database. The database would contain several tables, each corresponding to a subset of application information. The database could conceivably be organized using the DL number, social security number, and date of birth as primary identifiers to link table enties to an individual applicant.

Part III – Other data items. Most committee members recommended other available electronic or hardcopy data that could supplement or be included in the proposed database. For example, it was noted that many Driver Safety reexaminations, hearings, and interviews are scheduled and held between DL renewal periods and that information on these activities could be captured. In addition, the results of special or supplemental drive tests requested by Driver Safety could be obtained and possibly be added or linked to the database. It was also recommended that the current application subrecord be modified to include the actual written and drive test scores rather than recording only a test pass/fail indicator as currently done. Respondents noted that capturing data on tests requested by Driver Safety would be useful for determining whether to authorize additional driving tests (e.g., after repeatedly failing a skill and/or knowledge test) or to take a licensing action when, for example, evaluating lack of skill and lack of knowledge cases.

It was also suggested that the database include the date of issuance for a subsequent instruction permit or temporary driver license. The current system only includes the date of initial document issuance. Still another recommendation was to record the total number of days in which a temporary DL is valid to aid field office personnel in processing the application.

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[1] Licensing application information not entered through the Series 1 or RS6000 input system would not be captured by the envisioned database.

Part IV – Utility and value. The central theme of comments about the utility and value of the system was that any data incorporated into the proposed database that would help the department to provide information of value to internal and external users would be beneficial.

For example, it was noted that the proposed database could assist in determining whether required license restrictions, limited-term license status, suspensions, and revocations are imposed. This information would be of value for research studies in such topical areas as DUI, negligent operators, fraud, lack of skill and knowledge, and the relationship between driver age and safety.

Several respondents indicated that the proposed database would enhance problem driver identification. Specifically, the captured application history data would provide valuable information for hearing officers to better assess the risk level of individual drivers in conducting reexaminations and hearings.

Several committee members also stated that the proposed database could aid in providing more efficient, less costly, and more timely information to both the customers and to departmental staff, resulting in better resource allocation. For example, one respondent noted that if driving test, written test, and vision test volumes could be obtained for each field office, employee staffing resource issues may be more easily resolved.

Part V – Comments. Members of the advisory committee offered additional miscellaneous insights and opinions in their area of expertise that aided in conceptualizing the system.

Second Survey
The second survey had three parts: Part I – Summary of First Survey, Part II – Proposed Initial System Design, and Part III – Survey Questions. Part I summarized responses obtained from the first survey. Part II detailed two proposed system prototype designs which included the data sources and contents under consideration, the time period to be used for counting prior and subsequent driver record entries, and the intended system documentation. The material provided to the advice committee in Parts I and II of the survey is discussed more completely in the Proposed Prototype of the DL Application MIS Database section presented later in this report.

The following are the seven questions in Part III of the second survey and a summary of the responses for each question from the advisory committee.

Question 1: Would your office be likely to request driver license application data as conceptualized for the proposed system? Please describe briefly the nature and frequency of the requests you might make.

Each committee member who responded to the second survey stated that the proposed database prototype would provide a source of valuable information that would justify its development. For example, the database could be used to answer questions related to previous application information that is currently available only on microfilm. In addition, it was noted that users may request from the proposed database the historical

data on the complete application process after the issuance of a permanent driver license or when a new application is initiated. This history information would be useful to the department's hearing officers in making licensing decisions regarding, for example, physical and mental cases as relating to a lack of skill and/or lack of knowledge. Several respondents emphasized that the proposed database would be useful in responding to requests for history information involving use of a temporary driver license during a pending application. Several respondents stated that if the data were made available to them, their office would access the proposed database weekly or daily.

Question 2: Are there any additional data elements that you would like added to the proposed system?

Several committee members who handle inquires from courts and law enforcement personnel requested that the proposed system include items that would readily allow determination of whether the driving privilege was currently suspended or revoked and whether a driver had acknowledged receipt (e.g., suspension notice returned unclaimed) of the action. One respondent suggested that a comment field be added that would provide additional information on applicants who have been caught cheating (e.g., on licensing tests) during the application process. It was also requested that in addition to containing any physical and mental code indicator present on the driver record, the proposed database should also contain supplemental information from the DL Masterfile's History Subrecord on physical or mental conditions that affect their ability to drive safely. One respondent expressed the desire that Snellen visual acuity test scores and written/drive test scores be recorded in addition to the customary pass/fail indicator associated with applicant test performance.

Question 3: If the proposed system is developed, we plan on merging the application data with prior and subsequent driver record histories (i.e., crashes, citations, etc.). Would your office be interested in reports emanating from these additional data?

The majority of individuals involved in developing and evaluating traffic safety programs expressed interests in merging application data with prior and subsequent driver record histories. One respondent suggested that the application data would be complimented by information available from the department's Driver Safety Application MIS Database as well as legal history (e.g., license suspension and revocation) data obtained from the DL Master File. A respondent representing Driver Safety noted that summary statistical data related to violations and traffic crashes would be useful for developing guidelines for processing negligent operators and drivers in crashes involving a fatality.

Question 4: We are considering collecting data for only a sample of individuals rather than for the entire applicant population. Would the collection of only a sample of applicants negatively impact any potential use of these data by your office?

This question was asked in response to prior departmental management concerns that having application-process data (e.g., number of prior drive test failures across multiple applications) for all applicants might subject the department to liability problems. Management felt that liability would not be an issue if data were collected for only a

sample of individuals rather than for the entire applicant population. It could be argued that, because the data would not be available for all applicants, the department could not legally use the information for making licensing decisions. That is, the data would be used for research and informational purposes only.

Most respondents indicated that collecting application data on a sample of individuals rather than the entire applicant population would pose no problems as long as the sampling scheme was essentially random and resulted in minimal sampling bias. It was noted that if a sample of applicants formed the foundation of the database, the sample size should be large enough to allow the estimation of population parameters within a margin of error of plus or minus 2%.

Several respondents expressed concerns about basing the database on only a sample of applicants. One of them noted that due to the geographic and demographic differences between northern, central, and southern California, data gathered from the entire applicant population may be viewed as more reliable for policy, procedural, and operational decision making purposes. Another respondent noted that in the process of conducting pilot program evaluations, applicant performance data are often collected in field offices for later merging with additional driver licensing and application data. Collection of only a sample of applicants would decrease the likelihood of matching applicant records in the database to data collected on applicants in pilot studies.

Question 5: Please share any insights/advice or alternative ideas you have about the two database structures (i.e., hierarchical and relational data sets) presented on pages 5 and 6.

A detailed discussion of this topic, reflecting input from the committee where appropriate, is presented in the next chapter of this report.

Question 6: Do you believe that the proposed system would still be of value to your office if it were used to generate summary statistical reports rather than information on individual drivers?

The majority of respondents indicated that the proposed database would be of value as long as their offices/divisions were allowed to provide input into developing the content of the summary data and the statistical reports contained aggregated data rather than presenting information only on individual drivers. However, it was noted that information on individual drivers would be valuable and useful too.

Question 7: Please provide additional comments as desired. Attach additional pages if necessary.

Several respondents provided additional comments in support of the project. It was noted that the proposed database should be designed for ease of use. One respondent emphasized the importance of incorporating safeguards to insure confidentiality of information included in the proposed database.

Investigation of Other Data Systems
The department's Division of Investigations and Audits maintains a database that provides direct access to journal records of driver license transactions that are useful for investigation and audit purposes.

This audit database represents a data warehouse solution in which several months of field office journal data are placed in a single relational database structure that provides several indexed access paths. When loaded and indexed, the data can be accessed by audit and investigative staff members following established processes. The database system was constructed so that an auditor or investigator could use the system independently while the department's Information Services Division staff would be available to answer questions, provide technical advise, and resolve system problems.

Currently, this data warehouse system records several types of driver license application transactions such as original license issuances, license changes (e.g., adding certificates and upgrading license class), licensing actions, drive tests, and reexaminations. Only the DL application process data are included in the database; historical data (i.e., driver records) are not captured.

The system captures a moving window of 53 weeks of transaction data. The data are stored in a DB2 database at Stephen P. Teale Data Center. The data are accessed with Microsoft Access from the Teale network. The system costs approximately $7,000 a month to maintain.

In summary, the data warehouse developed for use by the department's auditing and investigating staff could be used as the basic source of input data for the database envisioned for the current project. A series of detailed specifications would need to be developed in order to adapt a similar output database for the objectives of the present effort of developing a longitudinal database of application and driver record histories for primarily traffic safety related purposes.

PROPOSED PROTOTYPE FOR THE DL APPLICATION MIS DATABASE

Data Contents and File Structure
It is estimated that approximately 13 million driver license transactions are conducted annually in the department's field offices. The majority of these transactions originate from data that are keyed by personnel into either a Series 1 or an RS6000 computer terminal. The specific type of transaction is identified by a three digit alphanumeric type of transaction code that identifies the transaction as an original or renewal driver license, duplicate driver license, name change, etc. The data from the completed transactions are saved to an electronic daily journal file at Stephen P. Teale Data Center, and the relevant information is written to the department's Driver License Master File.

It is envisioned that the application data for the DL application MIS database will be collected from the Series 1 and RS6000 computer terminals residing in the field offices. Since the intended use of the database will be for traffic safety related purposes rather than as a source for departmental audits, only data from correctly keyed applications will be saved to the MIS database. That is, application histories that are keyed

incorrectly, duplicated by error, etc. will be filtered and deleted from the proposed database. Specifically, DL application information for the following transaction codes would be primary candidates for inclusion in the database:

- DLA – original or renewal driver license
- DLC – change/correction of the driver license
- DLD – duplicate driver license
- DLE – renewal by mail with photo

Figure 1 illustrates a conceptual flow of data in the proposed database. It is anticipated that the DL application data contained in the daily journals would be written to a database, such as DB2, that would serve as an essential component of the database management system (DBMS). Users would be able to access the data through widely available software application programs including SAS, SPSS, Microsoft Access, Microsoft Excel, and others. The application programs would contain programming code used to generate user requested summary reports (e.g., biographical characteristics of three-time drive test failures, performance data covering multiple applications, and monitoring drive test scoring by examiners).
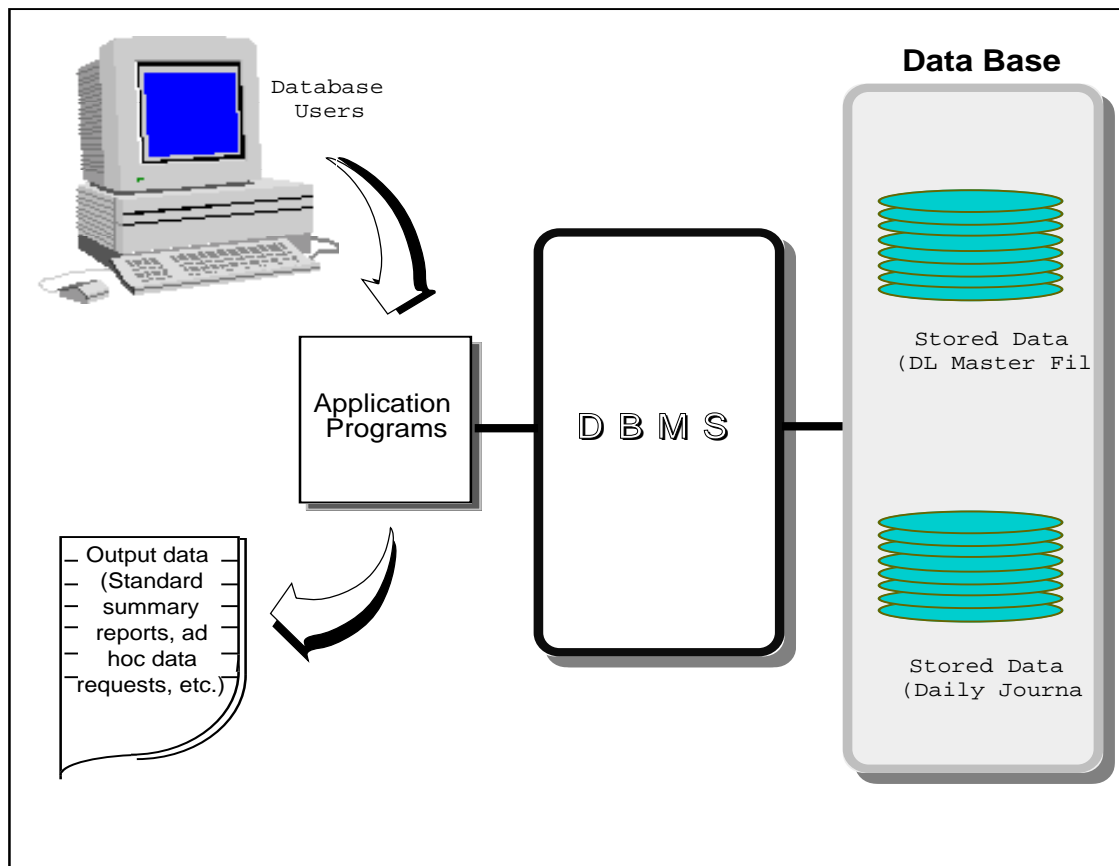
Figure 1. Conceptual flow of driver license application process data for the DL application MIS database.

The primary value of the conceptualized DL application MIS database is that it would contain comprehensive information on a driver's complete application history over multiple applications. The database would also allow for the use of existing driver record data extraction programs for subsequent match/merging with longitudinal driver record histories for use in traffic safety program evaluations. Since it is very unlikely that external funding can be secured to support long-term administration and maintenance of the proposed system by the department to meet the needs of outside users, it is anticipated that the database will be used primarily as an internal DMV resource.

Proposed Organization of Data in the DL Application MIS
Two possible structures for the organization of data in the proposed system are under consideration—hierarchical and relational. Each of these data structures is described below.

Hierarchical datasets. Figure 2 illustrates a dataset with a hierarchical structure. Typically, each record for a case (e.g., applicant) in a hierarchical file contains a data field that identifies whether it is a header record or a detail record. In the proposed database, the header record would consist of information (e.g., DL #, SSN, date of birth) identifying and linking an individual applicant to his/her driver license application history. The detail record would contain the detailed information pertaining to each DL application activity transacted for an individual.
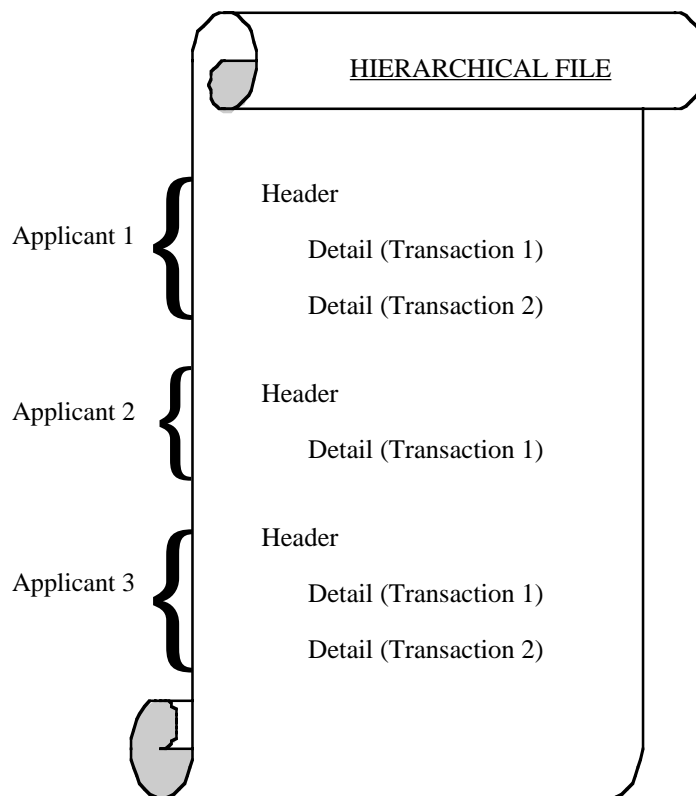
Figure 2. Example dataset with a hierarchical structure.

The hierarchical structure of the data would facilitate the construction of summary variables and datasets (e.g., pass/fail rate histories by field office and region) available for users.

Relational datasets. Figure 3 presents a schematic of an example dataset with a relational structure. Relational datasets contain variables in separate electronic files (tables) that can be extracted and merged for an individual applicant using an identifier key (e.g., driver license number). As noted in the figure, structured query language (SQL), available in software programs such as Microsoft Access and SAS, can be used to combine datasets and produce desired reports of statewide parameters such as test fail rate by field office and region over time.

Applicant Address Data		Application 1 Drive Test Results		Application 2 Drive Test Results	
DL#	Address...	DL#	Result	DL#	Result
A0000001	9138 Plaza Pk...	A0000001	Fail	A0000001	Fail
A0000002	9213 Roman Ct...	A0000001	Fail	A0000003	Fail
A0000003	8110 Sunny Dr...	A0000001	Fail	A0000003	Fail
		A0000002	Pass	A0000003	Pass
.	.	A0000003	Fail	.	.
.	.	A0000003	Fail	.	.
		A0000003	Fail		
		.	.		
		.	.		

Structured Query Language computer programs to combine data sets and produce desired reports of statewide parameters (e.g., pass/fail rate histories by field office and region)

Figure 3. Example dataset with a relational structure.

The primary value and intended use of the DL application system (whether structured hierarchically or relationally constructed) would be in providing summary and

aggregated information on licensing process activity throughout the state rather than as a source of information for making licensing decisions for individual applicants. The proposed database will provide data for study purposes such as evaluation of driver licensing programs, driver competency, and monitoring driver license operations.

Proposed DL Application MIS Data Elements
As stated in the above sections, the proposed system would capture licensing and biographical information contained within the department's automated files. The information would be captured from the daily journals obtained from daily field office transactions and from the DL Master File's Basic Record and E-4 Pending Driver License Application Subrecord. The proposed contents of the driver license application MIS database might contain the following items for each transaction:

Item Name	Item Length (Bytes)
Driver License Number	8
Social Security Number	9
Gender	1
Date of Birth	6
Date of Original Licensure in California	6
Latest License Issuance Type	1
Latest License Issuance Date	6
License Issuance Type No. 1	1
License Issuance Date No. 1	6
License Issuance Office No. 1	3
License Issuance Type No. 2	1
License Issuance Date No. 2	6
License Issuance Office No. 2	3
License Issuance Type No. 3	1
License Issuance Date No. 3	6
License Issuance Office No. 3	3
License Issuance Type No. 4	1
License Issuance Date No. 4	6
License Issuance Office No. 4	3
License Issuance Type No. 5	1
License Issuance Date No. 5	6
License Issuance Office No. 5	3
License Issuance Type No. 6	1
License Issuance Date No. 6	6
License Issuance Office No. 6	3
Birth Century	1
Latest License Class	1
Eye Color	1
Hair Color	1
Height	3
Weight	1
Physical and Mental Code	1
Drivers Name	35

Item Name	Item Length (Bytes)
AKA	35
Mailing Address	35
Resident Address	35
Zip Code of Residence	5
County of Residence	2
Endorsement Code 1	1
Endorsement Code 1 Date	6
Endorsement Code 2	1
Endorsement Code 2 Date	6
Endorsement Code 3	1
Endorsement Code 3 Date	6
Endorsement Code 4	1
Endorsement Code 4 Date	6
Commercial Endorsement 1	2
Commercial Endorsement 2	2
Commercial Endorsement 3	2
Commercial Endorsement 4	2
Incomplete Application Reason Code	2
Office ID	3
Work Date	6
Cashier ID	2
Sequence No	4
Type of Transaction Code	3
Application Date	6
Update Employment ID	2
No Fee Reason Code	1
Original/Non Original Indicator	1
Minor Guarantor Code	1
MAG Stripe #	3
MAG Stripe Code	3
MAG Stripe Date	6
Legal Presence Temporary	1
Legal Presence Indicator	1
Legal Presence Employee #	2
Legal Presence Limited	1
Legal Presence Phase III	1
Driver Class	1
Motorcycle Endorsement	1
Written/Drive Test Indicator	1
Problem Driver Point System Inquiry Indicator	1
Problem Driver Point System Eligibility Indicator	1
Driver Education	1
Driver Training	1
Out of State Name Abbreviation	5
Out of State License Number	20
Out of State License Type	1
Vision Test Results	1
Oral Test Indicator	1

17

Item Name	**Item Length (Bytes)**
Foreign Language	2
Sign Test 1 Results	1
Sign Test 2 Results	1
Sign Test 3 Results	1
Words/Phrases Test 1 Results	1
Words/Phrases Test 2 Results	1
Words/Phrases Test 3 Results	1
DL Pending Eligibility Renewal Term	1
Law Test 1 Class F Test Results	1
Law Test 2 Class F Test Results	1
Law Test 3 Class F Test Results	1
Law Test 1 Class M Test Results	1
Law Test 2 Class M Test Results	1
Law Test 3 Class M Test Results	1
Last Law Test Fail Date	4
Motorcycle Skill Test 1 Results	1
Motorcycle Skill Test 1 Fail Date	4
Motorcycle Skill Test 1 Examiner ID	2
Motorcycle Skill Test 2 Results	1
Motorcycle Skill Test 2 Fail Date	4
Motorcycle Skill Test 2 Examiner ID	2
Motorcycle Skill Test 3 Results	1
Motorcycle Skill Test 3 Fail Date	4
Motorcycle Skill Test 3 Examiner ID	2
Non Commercial Drive Test 1 Class	1
Non Commercial Drive Test 1 Results	1
Non Commercial Drive Test 1 Fail Date	4
Non Commercial Drive Test 1 Examiner ID	2
Non Commercial Drive Test 2 Class	1
Non Commercial Drive Test 2 Results	1
Non Commercial Drive Test 2 Fail Date	4
Non Commercial Drive Test 2 Examiner ID	2
Non Commercial Drive Test 3 Class	1
Non Commercial Drive Test 3 Results	1
Non Commercial Drive Test 3 Fail Date	4
Non Commercial Drive Test 3 Examiner ID	2
Restriction 1 of 5	2
Restriction 2 of 5	2
Restriction 3 of 5	2
Restriction 4 of 5	2
Restriction 5 of 5	2
Attachment 1 of 5	2
Attachment 2 of 5	2
Attachment 3 of 5	2
Attachment 4 of 5	2
Attachment 5 of 5	2
Limited Term Fee Due Year	2
Limited Term in Years	1

Item Name	Item Length (Bytes)
Instruction Permit 1 Date	4
Instruction Permit 1 Class	2
Temporary License 1 Date	4
Temporary License 1 Class	2
Previous Incomplete Application Reason Code	1
Military Extension Code	1
Motorcycle Training Indicator	1

It is recommended that the complete application history prior to licensure be maintained for each driver license applicant entering into the system for approximately 5 years. After the 5-year period has elapsed, it is suggested that a random sample of the records be stored in an archived data file that could be retrieved for tracking over multiple license issuances and for longitudinal analyses of driver record histories.

System Documentation
The department would need to create documentation of the structure and contents of the dataset, discuss known problems with any of the data elements, and recommend how to best access and process the data files.

Implementation Schedule
If departmental management decides to proceed with implementation of the proposed database, OTS funding would need to be requested and provided for the next stage (Stage II) of the DL Application MIS Database development project. Stage II will involve the creation of a prototype DL application MIS system with the design features (e.g., relational or hierarchical data structure) described above. Stage II would collect actual application data and produce trial information and example statistical reports as a demonstration and validation of the data system. Input for this evaluation would be solicited from traffic safety researchers, professionals, and department management. If the outcome of Stage II is successful, the department would consider pursuing development of a final DL Application MIS Database in a subsequent Stage III project funded by OTS.

The goal and objectives for the Stage II project are presented below:

Stage II goal. To develop and assess the usefulness of a prototype DL application management information system and statistical database providing data for study purposes and monitoring driver licensing operations.

Stage II objectives. The Stage II objectives will consist of the following:

1. Determine if the department's Division of Investigations and Audit's DL application transaction database of daily journal information would be available to serve as input to the proposed database.

2. Collect driver license application and driver history data from Audit's daily journal database system and/or the DL Master File following recommendations for the system prototype design made in this report.

3. Produce and distribute example statistical reports that might be of value to department management, the department's Research and Development Branch, and other targeted users.

4. Evaluate the usefulness and acceptability of the DL application MIS data and statistical reports to potential users and identify any necessary modifications to the system.

5. Submit the final project work product to departmental management and to OTS.

The Stage III effort, if pursued, would include detailed specification of software and hardware requirements, data storage and processing needs, programming to produce output reports, and cost estimates for a fully operational DL Application MIS Database.

SUMMARIZED ACCOMPLISHMENT OF PROJECT GOAL AND OBJECTIVES

The completed tasks and results that evidence accomplishment of the project goal and objectives are presented below.

Project Goal
The goal of this project was to develop a conceptual management information system design that will provide descriptive measures and statistical data related to the driver licensing process.

The conceptual model and database contents have been selected and will be used in the next phase of the project upon approval of departmental management to proceed with database development.

Project Objectives
Project objectives are defined as steps taken to meet the project goal. The objectives and the project activities supporting each one of them are listed below.

1. *To review existing database literature and to review the department's operational files, including procedures for their creation and modification.*

   This objective was completed by thoroughly reviewing the content and historical documentation of the various departmental electronic files containing information related to the driver licensing process.

2. *To identify driver license process information on the DL file and other available sources that may be of value to key users (management, Research and Development, licensing personnel, etc.).*

   The project identified driver license process information on the department's Driver License Master File and other available sources of use to potential users. This information was incorporated into a survey that was administered to the 13-member advisory committee for feedback on the proposed system.

3. *To evaluate the feasibility of capturing the desired data.*

   Feedback on the feasibility of capturing the desired data was provided through the survey responses of the advisory committee.

4 *To determine the desired characteristics of the management information system, the data format and file structure, index methods, and other necessary features of the database, and also whether the database should contain all or only a sample of available data.*

   As a follow-up to the survey responses, a number of meetings were conducted with task force members who would be potential database users and with programmers to determine the system's desired characteristics and structure.

5. *Determine the general data processing requirements for capturing, processing, and formatting the data, creating the file structure, and performing other necessary system functions.*

   A second survey was administered to committee members. The survey responses as input during follow-up meetings with departmental technical staff resulted in a series of proposed data processing requirements that would aid in the capturing, processing, and formatting of data. Several potential file structures for the database were also identified.

6. *Develop a general task and resource schedule that would support actual development and implementation of the conceptualized system.*

   A broad task schedule for the next stage of the project was developed. The resources to place the prototype system into operation will be determined as part of the follow-up project.

7. *Determine the acceptability of the conceptualized system to departmental management.*

   The second survey evaluated management and end-user acceptability of the proposed data elements and system design.

8. *Prepare a report of work products and recommendations.*

   This report accomplishes this objective.

APPENDIX A

DMV/ISD DATA SHEET

DMV/ISD DATA SHEET			DATE 04/03/98		SECTION # 622.10D		
FILE RECORD NAME DRIVERS LICENSE MASTER RECORD			AUTHOR DL Applications		PAGE 1		

FILE LABEL
  DL PENDING APPLICATION
  SUB-RECORD (E4)
	STORAGE MEDIUM
	DISK
				☐ INPUT
				☐ OUTPUT
				☐ INTERMEDIATE			

FORMAT:
  FR = Fixed Required   CLASS: A = Alpha   B = Binary   1 = Spaces
  FO = Fixed Optional   AN = Alphanumeric   P = Packed   2 = Spaces/Slashes
  VR = Variable Required   Z = Numeric   SC = Special Character   3 = Spaces/Printer Graphics
  VO = Variable Optional   BCD = Binary Coded Decimal

GENERAL INFORMATION: FILE SEQUENCE: DL NUMBER

				COMPRESSED		EXPLODED	
ITEM #	ITEM DESCRIPTION		FORMAT	CLASS	MAX. BYTES	CLASS	MAX. BYTES
1.	DOCUMENT CODE	(X 'E4')	FR	B	1	B	1
2.	RECORD LENGTH		FR	B	1	B	1
3.	FO MASK		FR	B	9	B	9
4.	INCOMPLETE APP REASON CODE		FR	AN	2	AN	2
5.	OFFICE ID		FR	AN	3	AN	3
6.	WORK DATE (MMDDYY)		FR	P	3.0	Z	6
7.	CASHIER ID		FR	AN	2	AN	2
8.	SEQUENCE #		FR	P	2.0	Z	4
9.	TTC		FR	AN	3	AN	3
10.	APP DATE (MMDDYY)		FR	P	3.0	Z	6
11.	UPDATE EMPLOYEE ID		FR	AN	2	AN	2
12.	NO FEE REASON CODE		FO	AN	1	AN	1
13.	ORIGINAL/NON-ORIGINAL INDICATOR		FO	AN	1	AN	1
14.	MINOR GUARANTOR CODE		FO	AN	1	AN	1
15.	BIRTH DATE INFORMATION						
15.1	BIRTH DATE (MMDDYY)		FO	Z	6	Z	6
15.2	BIRTH DATE/LEGAL PRESENCE VERIFIED INDICATOR		FO	AN	1	AN	1
16.	PHOTO LICENSE INFORMATION						
16.1	MAG/MND INDICATOR		FO	AN	3	AN	3
16.2	MAG OFFICE		FO	AN	3	AN	3
16.3	MAG DATE (MMDDYY)		FO	Z	6	Z	6
17.	APP CLASS						
17.1	DRIVER CLASS		FO	AN	1	AN	1
17.2	M/C ENDORSEMENT		FO	AN	1	AN	1
18.	TEST / CDL FEE INDICATORS						
18.1	WRITTEN / DRIVE TEST INDICATOR (ALWAYS PRESENT)		FO	AN	1	AN	1
18.2	CDL APP FEE PAID INDICATOR		FO	AN	1	AN	1

22

DMV/ISD DATA SHEET		DATE 04/03/98		SECTION # 622.10D	
FILE RECORD NAME DRIVERS LICENSE MASTER RECORD		AUTHOR DL Applications		PAGE 2	
FILE LABEL DL PENDING APPLICATION SUB-RECORD (E4)	STORAGE MEDIUM DISK		☐ INPUT ☐ OUTPUT ☐ INTERMEDIATE		

			COMPRESSED		EXPLODED	
ITEM #	ITEM DESCRIPTION	FORMAT	CLASS	MAX. BYTES	CLASS	MAX. BYTES
19.	FIREFIGHTER FEE / BD CENTURY INDICATOR					
19.1	FIREFIGHTER APP FEE PAID INDICATOR (ALWAYS PRESENT)	FO	AN	1	AN	1
19.2	CENTURY INDICATOR FOR BIRTH YEAR	FO	AN	1	AN	1
20.	PDPS INFORMATION	FO	AN	1	AN	1
20.1	PDPS INQUIRY INDICATOR (ALWAYS PRESENT)	FO	AN	1	AN	1
20.2	PDPS ELIGIBILITY INDICATOR	FO	AN	1	AN	1
21.	ADDITIONAL FEE INDICATORS					
21.1	PAID BY CREDIT CARD INDICATOR (ALWAYS PRESENT)	FO	AN	1	AN	1
21.2	CDL DRIVE TEST FEE USED INDICATOR	FO	AN	1	AN	1
22.	DRIVER EDUCATION/TRAINING INFO					
22.1	DRIVER EDUCATION (ALWAYS PRESENT)	FO	AN	1	AN	1
22.2	DRIVER TRAINING	FO	AN	1	AN	1
23.	O/S NAME ABBREVIATION	FO	AN	5	AN	5
24.	O/S LICENSE NUMBER					
24.1	O/S LICENSE - LENGTH	FO	B	1	B	1
24.2	O/S LICENSE NUMBER	VO	AN	20	AN	20
25.	O/S LOCATION CODE	FO	AN	1	AN	1
26.	O/S TYPE	FO	AN	1	AN	1
27.	VISION TEST RESULTS	FO	AN	1	AN	1
28.	ORAL TEST INDICATOR	FO	AN	1	AN	1
29.	FOREIGN LANGUAGE	FO	AN	2	AN	2
30.	SIGN TEST 1 RESULTS	FO	AN	1	AN	1
31.	SIGN TEST 2 RESULTS	FO	AN	1	AN	1
32.	SIGN TEST 3 RESULTS	FO	AN	1	AN	1
33.	WORDS/PHRASES TEST 1 RESULTS	FO	AN	1	AN	1
34.	WORDS/PHRASES TEST 2 RESULTS	FO	AN	1	AN	1
35.	WORDS/PHRASES TEST 3 RESULTS	FO	AN	1	AN	1
36.	UNUSED	FO	AN	1	AN	1
37.	UNUSED	FO	AN	1	AN	1
38.	UNUSED	FO	AN	1	AN	1
39.	DL PENDING ELIGIBLE RENEWAL TERM	FO	AN	1	AN	1
40.	DL PENDING APP FEE AMOUNT PAID (1ST BYTE)	FO	AN	1	AN	1
41.	DL PENDING APP FEE AMOUNT PAID (2ND BYTE)	FO	AN	1	AN	1
42.	LAW TEST 1 CL F TEST RESULTS	FO	AN	1	AN	1
43.	LAW TEST 2 CL F TEST RESULTS	FO	AN	1	AN	1

	DATE	SECTION #
DMV/ISD DATA SHEET	04/03/98	622.10D
FILE RECORD NAME	AUTHOR	PAGE
DRIVERS LICENSE MASTER RECORD	DL Applications	3

FILE LABEL	STORAGE MEDIUM	☐ INPUT
DL PENDING APPLICATION	DISK	☐ OUTPUT
SUB-RECORD (E4)		☐ INTERMEDIATE

				COMPRESSED		EXPLODED	
ITEM #	ITEM DESCRIPTION		FORMAT	CLASS	MAX. BYTES	CLASS	MAX. BYTES
44.	LAW TEST 3 CL F TEST RESULTS		FO	AN	1	AN	1
45.	LAW TEST 1 CL M TEST RESULTS		FO	AN	1	AN	1
46.	LAW TEST 2 CL M TEST RESULTS		FO	AN	1	AN	1
47.	LAW TEST 3 CL M TEST RESULTS		FO	AN	1	AN	1
48.	LAST LAW TEST FAIL DATE	(MMDD)	FO	P	2.0	Z	4
49.	MOTORCYCLE SKILL TEST 1						
49.1	M/C SKILL TEST 1 RESULTS		FO	AN	1	AN	1
49.2	M/C SKILL TEST 1 FAIL DATE	(MMDD)	FO	Z	4	Z	4
49.3	M/C SKILL TEST 1 EXAMINER ID		FO	AN	2	AN	2
50.	MOTORCYCLE SKILL TEST 2						
50.1	M/C SKILL TEST 2 RESULTS		FO	AN	1	AN	1
50.2	M/C SKILL TEST 2 FAIL DATE	(MMDD)	FO	Z	4	Z	4
50.3	M/C SKILL TEST 2 EXAMINER ID		FO	AN	2	AN	2
51.	MOTORCYCLE SKILL TEST 3						
51.1	M/C SKILL TEST 3 RESULTS		FO	AN	1	AN	1
51.2	M/C SKILL TEST 3 FAIL DATE	(MMDD)	FO	Z	4	Z	4
51.3	M/C SKILL TEST 3 EXAMINER ID		FO	AN	2	AN	2
52.	NON-COMMERCIAL DRIVE TEST 1						
52.1	N/C DRIVE TEST 1 CLASS		FO	AN	1	AN	1
52.2	N/C DRIVE TEST 1 RESULTS		FO	AN	1	AN	1
52.3	N/C DRIVE TEST 1 FAIL DATE	(MMDD)	FO	Z	4	Z	4
52.4	N/C DRIVE TEST 1 EXAMINER ID		FO	AN	2	AN	2
53.	NON-COMMERCIAL DRIVE TEST 2						
53.1	N/C DRIVE TEST 2 CLASS		FO	AN	1	AN	1
53.2	N/C DRIVE TEST 2 RESULTS		FO	AN	1	AN	1
53.3	N/C DRIVE TEST 2 FAIL DATE	(MMDD)	FO	Z	4	Z	4
53.4	N/C DRIVE TEST 2 EXAMINER ID		FO	AN	2	AN	2
54.	NON-COMMERCIAL DRIVE TEST 3						
54.1	N/C DRIVE TEST 3 CLASS		FO	AN	1	AN	1
54.2	N/C DRIVE TEST 3 RESULTS		FO	AN	1	AN	1
54.3	N/C DRIVE TEST 3 FAIL DATE	(MMDD)	FO	Z	4	Z	4
54.4	N/C DRIVE TEST 3 EXAMINER ID		FO	AN	2	AN	2
55.	RESTRICTION 1/5		FO	P	1.0	Z	2
56.	RESTRICTION 2/5		FO	P	1.0	Z	2
57.	RESTRICTION 3/5		FO	P	1.0	Z	2
58.	RESTRICTION 4/5		FO	P	1.0	Z	2
59.	RESTRICTION 5/5		FO	P	1.0	Z	2
60.	ATTACHMENT 1/5		FO	P	1.0	Z	2

		DATE	SECTION #
DMV/ISD DATA SHEET		04/03/98	622.10D
FILE RECORD NAME		*AUTHOR*	*PAGE*
DRIVERS LICENSE MASTER RECORD		DL Applications	4
FILE LABEL	*STORAGE MEDIUM*	☐ INPUT	
DL PENDING APPLICATION	DISK	☐ OUTPUT	
SUB-RECORD (E4)		☑ INTERMEDIATE	

			COMPRESSED		EXPLODED	
ITEM #	ITEM DESCRIPTION	FORMAT	CLASS	MAX. BYTES	CLASS	MAX. BYTES
61.	ATTACHMENT 2/5	FO	P	1.0	Z	2
62.	ATTACHMENT 3/5	FO	P	1.0	Z	2
63.	ATTACHMENT 4/5	FO	P	1.0	Z	2
64.	ATTACHMENT 5/5	FO	P	1.0	Z	2
65.	LIMITED TERM FEE DUE YEAR	FO	Z	2	Z	2
66.	LIMITED TERM IN YEARS	FO	Z	1	Z	1
67.	INSTRUCTION PERMIT					
67.1	INSTRUCTION PERMIT 1 DATE (MMDD)	FO	Z	4	Z	4
67.2	INSTRUCTION PERMIT 1 CLASS	FO	AN	2	AN	2
68	TEMPORARY LICENSE 1					
68.1	TEMPORARY LICENSE 1 DATE (MMDD)	FO	Z	4	Z	4
68.2	TEMPORARY LICENSE 1 CLASS	FO	AN	2	AN	2
69.	PREVIOUS INCOMPLETE APP REASON CODE	FO	AN	1	AN	1
70.	PD INDICATOR	FO	AN	1	AN	1
71.	MILITARY EXTENSION CODE	FO	AN	1	AN	1
72.	INS DOCUMENT EXPIRATION DATE	FO	Z	6	Z	6
73.	SSN VERIFIED CODE (ALWAYS PRESENT)	FO	AN	1	AN	1
73.1	SOCIAL SECURITY NUMBER	FO	AN	9	AN	9
73.2	MAG STRIPE SEQUENCE NUMBER	FO	Z	4	Z	4
73.3	APP AFTER LEGAL PRESENCE STAGE III	FO	AN	1	AN	1
74.	LAST PROCESSING DATE	FO	Z	6	Z	6
75.	MOTORCYCLE TRAINING	FO	AN	1	AN	1
76.	IMMIGRATION & NATURALIZATION SERVICE (INS) NUMBER					
76.1	INS DOCUMENT NUMBER PREFIX	FO	AN	1	AN	1
76.2	INS NUMBER	FO	AN	11	AN	11
77.	IMMIGRATION & NATURALIZATION SERVICE (INS) INQUIRY INFORMATION					
77.1	INS INQUIRY INDICATOR	FO	AN	1	AN	1
77.2	ASVI CHECK BYPASS INDICATOR	FO	AN	1	AN	1
78.	LEGAL PRESENCE LIMITED TERM INDICATOR	FO	AN	1	AN	1
	Totals			234		255

Description of Fields In The DL Pending App Sub-Record (Code E4)

Field #   Field Description

1.   DOCUMENT CODE

A binary field used to identify the DL Pending App Sub-Record (X 'E4').

2.   RECORD LENGTH

A binary field defining the length of the compressed sub-record.

3.   FO-VO MASK

A binary field which defines the absence or presence of optional fields in the DL Pending App Sub-Record.

4.   INCOMPLETE APP REASON CODE

Contains a code indicating the reason the DL application is incomplete.,

5.   OFFICE ID

Contains the office code representing the DMV field office where the application was filed.

6.   WORK DATE

Contains the cashiering work date that the application was started.

7.   CASHIER ID

Contains a code representing the identificcation of the original technician that accepted and cashiered the payment for the application.

8.   SEQUENCE #

Contains the unique number assigned to a transaction, when the transaction is carhiered.

9.   TTC

Contains the type transaction code identifying whether the application is an origina., duplicate, renewal, renewal by mail, retake, etc.

10.   APP DATE

Contains the date the application wa started.

11.   UPDATE EMPLOYEE ID

Contains the current employee ID code which authorized the application update.

Description of Fields In The DL Pending App Sub-Record (Code E4)

12.   NO FEE REASON CODE

Contains a code reflecting the reason an app fee was not paid.

13.   ORIGINAL/NON ORIGINAL INDICATOR

Contains a code reflecting whether the application is an original or a non-original.

14.   MINOR GUARANTOR CODE

Contains a code indicating what type of guarantor accepted the liability for a minor's application for a driver license

15.   BIRTH DATE INFORMATION

15.1   BIRTH DATE

Contains the birth date of the applicant.

15.2   BIRTH DATE/LEGAL PRESENCE VERIFIED INDICCATOR

Contains a code that represents what document was used to verify an applicants birth date and legal presence.

16.   PHOTO LICENSE INFORMATION

16.1   MAG/MND INDICATOR

Contains a code that represents whether the application was processed under automated mode (MAG) or under manual or travel mode.

16.2   MAG OFFICE

Contains the office code representing the DMV field office where the photo was taken.

16.3   MAG DATE

Contains the date the photo was taken.

17.   APP CLASS

17.1   DRIVER CLASS

Contains a code defining the level or classification of vehicle(s) that the applicant would be authorized to drive.

17.2   M/C ENDORSEMENT

Contains a code indicating that the client has applied to operate a motocycle.

18.   TEST/CDL FEE INDICATORS

Description of Fields In The DL Pending App Sub-Record (Code E4)

18.1   WRITTEN/DRIVE TEST INDICATOR

Contains a code representing the results of the law test or the drive test.

18.2   APP FEE PAID INDICATOR

Contains a code representing whether or not a CDL application fee was paid.

19   FIREFIGHTER FEE/BD CENTURY INDICATOR

19.1   FIREFIGHTER APP FEE PAID INDICATOR

Contains a code representing whether or not a firefighter application fee was paid.

19.2   CENTURY INDICATOR FOR BIRTH YEAR

Contains a code representing the century of birth of the applicant where 8=1800, 9=1900, 0=2000.

20   PDPS INDICATORS

20.1   PDPS INQUIRY INDICATOR

Contains a code indicating the status of PDPS inquiry where:
Y = PDPS inquiry was made with hits
N = PDPS inquiry was made with no hits
I = PDPS inquiry is needed
P = PDPS inquiry was prreviously made (not counted for statistical purposes).

20.2   PDPS ELIGIBILITY INDICATOR

Contains a code representing whether an applicant is eligible to be licensed in California (N = Not Eligible, E = Eligible.

21.   ADDITIONAL FEE INDICATORS

21.1   PAID BY CREDIT CARD INDICATOR

Contains a code representing whether the typ-e of payment media used to pay for the DL application was by credit card (Y = Yes).

21.2   CDL DRIVE TEST FEE USED INDICATOR

Contains a code representing whether the CDL drive test fee was used (Y = Yes, used; N = No, not used; space = CDL drive test fee not paid/needed).

22.   DRIVER EDUCATIONTRAINING INFO

22.1   DRIVER EDUCATION

Contains a code representi8ng the driver education status of a minor applicant.

22.2   DRIVER TRAINING

Contains a code representing the driver t4raining status of a minor applicant.

Description of Fields In The DL Pending App Sub-Record (Code E4)

23.   O/S NAME ABBREVIATION

Contains the name (up to 5 character abbreviation) of the state or country where the client was previously licensed.

24   OS LICENSE NUMBER

24.1   O/S LICENSE LENGTH

Contains a binary code defining the length of the O/S license number.

24.2   O/S LICENSE NUMBER

Contains the O/S license number of the previous licensing state.

25   O/S LOCATION CODE

Contains the disposition or physical location of the O/S license.

26.   O/S TYPE

Contains a code representing, for minors only, whether the applicant had a restricted (other than corrective lenses)/probationary license from another state of country (R = restriction other than corrective lenses; Y = provisional, probationary or junior license; space = not a minor or conditions listed above do not apply).

27.   VISION TEST RESULTS

Contains a code representing the results of the applicant's vision test.

28.   ORAL TEST INDICATOR

Contains a code representing the results of the applicant's oral test.

29.   FOREIGN LANGUAGE

Contains a two character abbreviation of the foreign language used in place of the English language written test.

30.   SIGN TEST 1 RESULTS

Contains a code representing the results of the sign test 1.

31.   SIGN TEST 2 RESULTS

Contains a code representing the results of the sign test 2.

32.   SIGN TEST 3 RESULTS

Contains a code representing the results of the sign test 3.

33.   WORDS/PHRASES TEST 1 RESULTS

Contains a code representing the results of the words/phrases test 1.

Description of Fields In The DL Pending App Sub-Record (Code E4)

34.   WORDS/PHRASES TEST 2 RESULTS

Contains a code representing the results of the words/phrases test 2.

35.   WORDS/PHRASES TEST 3 RESULTS

Contains a code representing the results of the words/phrases test 3.

36.   AVAILABLE

37.   AVAILABLE

38.   AVAILABLE

39.   DL PENDING ELIGIBLE RRENEWAL TERM

Contains the term (4 yrs or 5 yrs) of the driver license for which the applicant is eligible.

40.   DL PENDING APP FEE AMOUNT PAID (FIRST BYTE)

Contains the first digit of the application fee amount paid (excluding drive test fees) on the pending application.

41.   DL PENDING APP FEE AMOUNT PAID (SECOND BYTE)

Contains the second digit of the application fee amount paid (excluding drive test fees) on the pending application.

42.   LAW TEST 1 CL F TEST RESULTS

Contains a code representing the law test 1, class F test results.

43.   LAW TEST 2 CL F TEST RESULTS

Contains a code representing the law test 2, class F test results.

44.   LAW TEST 3 CL F TEST RESULTS

Contains a code representing the law test 3, class F test results.

45.   LAW TEST 1 CL M TEST RESULTS

Contains a code representing the law test 1, class M test results.

46.   LAW TEST 2 CL M TEST RESULTS

Contains a code representing the law test 2, class M test results.

47.   LAW TEST 3 CL M TEST RESULTS

Contains a code representing the law test 3, class M test results.

48.   LAST LAW TEST FAIL DATE

Contains the last date the minor applicant failed a law test.

Description of Fields In The DL Pending App Sub-Record (Code E4)

49.   MOTORCYCLE SKILL TEST 1

49.1   M/C SKILL TEST 1 RESULTS

Contains a code representing the results of the motorcycle skill test 1.

49.2   M/C SKILL TEST 1 FAIL DATE

Contains the failure date of the motorcycle skill test 1.

49.3   M/C SKILL TEST 1 EXAMINER ID

Contains the ID of the examiner who administered the motorcycle skill test.

50.   MOTORCYCLE SKILL TEST 2

50.1   M/C SKILL TEST 2 RESULTS

Contains a code representing the results of the motorcycle skill test 2.

50.2   M/C SKILL TEST 2 FAIL DATE

Contains the failure date of the motorcycle skill test 2.

50.3   M/C SKILL TEST 2 EXAMINER ID

Contains the ID of the examiner who administered the motorcycle skill test.

51.   MOTORCYCLE SKILL TEST 3

51.1   M/C SKILL TEST 3 RESULTS

Contains a code representing the results of the motorcycle skill test 3.

51.2   M/C SKILL TEST 3 FAIL DATE

Contains the failure date of the motorcycle skill test 3.

51.3   M/C SKILL TEST 3 EXAMINER ID

Contains the ID of the examiner who administered the motorcycle skill test.

52.   NON-COMMERCIAL DRIVE TEST 1

52.1   N/C DRIVE TEST 1 CLASS

Contains the class of license for which the applicant took drive test 1.

52.2   N/C DRIVE TEST 1 RESULTS

Contains a code representing the results of N/C drive test 1.

52.3   N/C DRIVE TEST 1 FAIL DATE

Contains the failure date for drive test 1.

52.4   N/C DRIVE TEST 1 EXAMINER ID

Contains the ID of the examiner who administered the N/C drive test 1.

Description of Fields In The DL Pending App Sub-Record (Code E4)

53	NON-COMMERCIAL DRIVE TEST 2
53.1	N/C DRIVE TEST 2 CLASS

Contains the class of license for which the applicant took drive test 2.

53.2	N/C DRIVE TEST 2 RESULTS

Contains a code representing the results of N/C drive test 2.

53.3	N/C DRIVE TEST 2 FAIL DATE

Contains the failure date for drive test 1.

53.4	N/C DRIVE TEST 2 EXAMINER ID

Contains the ID of the examiner who administered the N/C drive test 2.

54	NON-COMMERCIAL DRIVE TEST 3
54.1	N/C DRIVE TEST 3 CLASS

Contains the class of license for which the applicant took drive test 3.

54.2	N/C DRIVE TEST 3 RESULTS

Contains a code representing the results of N/C drive test 3.

54.3	N/C DRIVE TEST 3 FAIL DATE

Contains the failure date for drive test 3.

54.4	N/C DRIVE TEST 3 EXAMINER ID

Contains the ID of the examiner who administered the N/C drive test 3.

55.	RESTRICTION 1/5

Contains a code representing a restriction or limitation placed on the driving privilege.

56.	RESTRICTION 2/5

Contains a code representing a restriction or limitation placed on the driving privilege.

57.	RESTRICTION 3/5

Contains a code representing a restriction or limitation placed on the driving privilege.

58.	RESTRICTION 4/5

Contains a code representing a restriction or limitation placed on the driving privilege.

Description of Fields In The DL Pending App Sub-Record (Code E4)

59.   RESTRICTION 5/5

Contains a code representing a restriction or limitation placed on the driving privilege.

60.   ATTACHMENT 1/5

Contains a code to identify additional documents which have been received.

61.   ATTACHMENT 2/5

Contains a code to identify additional documents which have been received.

62.   ATTACHMENT 3/5

Contains a code to identify additional documents which have been received.

63.   ATTACHMENT 4/5

Contains a code to identify additional documents which have been received.

64.   ATTACHMENT 5/5

Contains a code to identify additional documents which have been received.

65.   LIMITED TERM FEE DUE YEAR

Contains the year a new DL application fee must be paid.

66.   LIMITED TERM IN YEARS

Contains the number of years for which the limited term license will be issued.

67.   INSTRUCTION PERMIT

67.1   INSTRUCTION PERMIT 1 DATE

Contains the month (MM) and year (YY) the last instruction permit was issued.

67.2   INSTRUCTION PERMIT 1 CLASS

Contains the class of license for which the instruction permit was issued.

68.   TEMPORARY LICENSE 1

68.1   TEMPORARY LICENSE 1 DATE

Contains the month (MM) and year (YY) the temporary/interim linse was issued.

68.2   TEMPORARY LICENSE 1 CLASS

Contains the class of license for which the temporary/interim license was issued.

69.   PREVIOUS INC. APP REASON CODE

Contains a code representing the reason a prior application ws incomplete.

Description of Fields In The DL Pending App Sub-Record (Code E4)

70.   PD INDICATOR

Contains an indicator that represents that the PDPS inquiry is questionable and requires further investigation because a response was received on a Problem Driver Pointer System (PDPS) inquiry and the name and/or birthdate on the transaction was subsequently changed.

71.   MILITARY EXTENSION CODE

Contains a code indicating that the expiration date of the license has been extended because the licensee is in the military.

72.   INS DOCUMENT EXPIRATION DATE

Contains the expiration date of the Immigration and Naturalization Service document that was presented as proof of legal presence.

73.   SSN VERIFIED CODE

Contains a code representing how the applicant's social security number was verified.

73.1   SOCIAL SECURITY NUMBER

Contains the applicant's social security number.

72.1   MAG STRIPE SEQUENCE NUMBER

Caontains a sequence number assigned by the video capture stateion (VCS) for each photo taken.

73.3   APP AFTER LEGAL PRESENCE STAAGE III

Contains an indicator representing that the application was started after implementation of Legal Presence Stage III.

74.   LAST PROCESSING DATE

Contains the date the application was last updated

75.   MOTORCYCLE TRAINING

Contains a code representing whether a minor has a motorcycle training certificate.

76.   IMIGRATION & NATURALIZATION SERVICE (INS) NUMBER

76.1   INS DOCUMENT NUMBER PREFIX

Contains the prefix to the number that was on the INS document presented as proof of legal presence.

Description of Fields In The DL Pending App Sub-Record (Code E4)

76.2   INS DOCUMENT NUMBER

Contains the number that was on the INS document presented as proof of legal presence.

77.   IMMIGRATION & NATURALIZATION SERVICE (INS) INQUIRY INFORMATION

77.1   INS INQUIRY INDICATOR

Contains an indicator that represents the status of the Immigration and Naturalization Services (INS) inquiry. (Sp = Not Needed; I = Needed: V = Verfied; N = Not Verified).

77.2   ASVI CHECK BYPASS INDICATOR

Contains an indicator that represents an inquiry to INS is to be bypassed during the DMVA Application process because the inquiry will be performed through other on-line verification methods.

78.   LEGAL PRESENCE LIMITED TERM INDICATOR

Contains an indicator that represents that the license is to be issued as a limited term because the Legal Presence Document expires prior to the full term of the driver license.

APPENDIX B

DEVELOPMENT OF A DRIVER LICENSE APPLICATION MANAGEMENT INFORMATION SYSTEM SURVEY QUESTIONNAIRE

Part I - Determining Data Usefulness

Listed below and on the next several pages are data items available in the Driver License Master Pending Driver License Application Subrecord. Please rate each item by checking the appropriate box, indicating whether you think the items would have major, moderate, minor, or no value to you or others in the department for traffic safety research, licensing program administration, or resource allocation.

If you are aware of any problems regarding the accuracy and completeness of the item, please explain by writing comments below the item or on the back of the page as well.

DL Pending Application Subrecord Item Description

1. <u>Incomplete App Reason Code</u> – Contains a code indicating the reason the DL application is incomplete.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

2. <u>Office ID</u> – Contains the office code representing the DMV field office where the application was filed.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

3. <u>Work Date</u> – Contains the cashiering work date that the application was started.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

4. <u>Cashier ID</u> - Contains a code representing the identification of the original technician who accepted and cashiered the payment for the application.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

5. <u>TTC (Type of Transaction Code)</u> – Contains the type of transaction code identifying whether the application is an original, renewal, renewal by mail, photo retake, etc.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

6. <u>App Date</u> – Contains the date the application was started.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

7. <u>Update Employee ID</u> – Contains the current employee ID code which authorized the application update.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

8. <u>No Fee Reason Code</u> – Contains a code reflecting the reason an application fee was not paid.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

9. <u>Original/Non Original Indicator</u> – Contains a code reflecting whether the application is an original or non-original.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

10. <u>Minor Guarantor Code</u> – Contains a code indicating what type of guarantor accepted the liability for a minor's application for a driver license.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

11. <u>Birth Date</u> – Contains the birth date of the applicant.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

12. <u>Birth Date/Legal Presence Verified Indicator</u> – Contains a code that represents what document was used to verify an applicant's birth date and legal presence.

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

13. <u>MAG/MND Indicator</u> – Contains a code that represents whether the application was processed under automated mode (MAG) or under manual or travel mode (MND).

    ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

14. <u>MAG Office</u> – Contains the office code representing the DMV field office where the photo was taken.

   ❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

15. <u>MAG Date</u> – Contains the date the photo was taken.

   ❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

16. <u>Driver Class</u> – Contains a code defining the level of classification of vehicles that the applicant would be authorized to drive.

   ❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

17. <u>Motorcycle Endorsement</u> – Contains a code indicating that the client has applied to operate a motorcycle.

   ❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

18. <u>Written/Drive Test Indicators</u> – Contains a code representing the results of the law or the drive test.

   ❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

19. <u>App Fee Paid Indicator</u> – Contains a code representing whether or not a CDL application fee was paid.

   ❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

20. <u>Firefighter App Fee Paid Indicator</u> – Contains a code representing whether or not a firefighter application fee was paid.

   ❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

21. <u>Century Indicator for Birth Year</u> – Contains a code representing the century of birth of the applicant where 8 = 1800, 9 = 1900, 0 = 2000.

   ❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

22. <u>PDPS Eligibility Indicator</u> – Contains a code representing whether an applicant is eligible to be licensed in California (N = Not Eligible, E = Eligible).

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

23. <u>Paid by Credit Card Indicator</u> – Contains a code representing whether the type of payment media used to pay for the DL application was by credit card (Y = Yes).

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

24. <u>CDL Drive Test Fee Used Indicator</u> – Contains a code representing whether the CDL drive test fee was used (Y = Yes, N = No; space = CDL drive test fee not paid/needed).

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

25. <u>Driver Training</u> – Contains a code representing the driver training status of a minor applicant.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

26. <u>O/S Name Abbreviation</u> – Contains the abbreviation of the state or country where the applicant was previously licensed.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

27. <u>O/S License Length</u> – Contains a binary code defining the length of the out-of-state license number.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

28. <u>O/S License Number</u> – Contains the out-of-state license number of the previous licensing state.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

29. <u>O/S Location Code</u> – Contains the disposition or physical location of the out-of-state license.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

30. <u>O/S Type</u> – Contains a code representing, for minors only, whether the applicant had a restricted (other than corrective lenses) probationary license from another state or country (R = restriction other than corrective lenses; Y = Provisional, probationary, or junior license; space = not a minor or conditions listed above do not apply).

❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

31. <u>Vision Test Results</u> – Contains a code representing the results of the applicant's vision test.

❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

32. <u>Oral Test Indicator</u> – Contains a code representing the results of the applicant's oral test.

❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

33. <u>Foreign Language</u> – Contains a two character abbreviation of the foreign language used in place of the English language written test.

❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

34. <u>Sign Test 1-3 Results</u> – Contains codes representing the results of the sign test attempts 1-3.

❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

35. <u>Words/Phrases Test 1-3 Results</u> – Contains codes representing the results of the words and phrases test attempts 1-3.

❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

36. <u>DL Pending Eligible Renewal Term</u> – Contains the term of the driver license (4 yrs or 5 yrs) for which the applicant is eligible.

❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

37. <u>Fee Amount Paid</u> – (excluding drive test fees) on the pending application.

❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

38. Law Test 1-3 Class F Test Results – Contains codes representing attempts 1-3 results
     of the Class F (i.e., noncommercial Class C) test.

     ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

39. Law Test 1-3 Class M Test Results – Contains codes representing attempts 1-3 results
     of the Class M (motorcycle) test.

     ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

40. Last Law Test Fail Date – Contains the last date the minor applicant failed a law test.

     ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

41. Motorcycle Skill Test 1-3 Results – Contains codes representing results of the
     motorcycle skill test attempts 1-3.

     ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

42. Motorcycle Skill Test 1-3 Fail Date – Contains the failure dates of the motorcycle skill
     test attempts 1-3.

     ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

43. Motorcycle Skill Test 1-3 Examiner ID - Contains the identification of the examiner(s)
     who administered the motorcycle skill tests 1-3.

     ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

44. Non-Commercial Drive Test 1-3 Results – Contains codes representing the results of
     the non-commercial drive test attempts 1-3.

     ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

45. Non-Commercial Drive Test 1-3 Fail Date – Contains the failure dates of the non-
     commercial drive test attempts 1-3.

     ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

46. <u>Non-Commercial Drive Test 1-3 Examiner ID</u> – contains the identification of the examiner(s) who administered the non-commercial drive test attempts 1-3.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

47. <u>Restrictions 1-5</u> – Contains codes representing restrictions or limitations placed on the driving privilege.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

48. <u>Attachments 1-5</u> – Contains codes to identify additional documents which have been received.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

49. <u>Limited Term Fee Due Year</u> – contains the year in which a new DL application fee must be paid.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

50. <u>Limited Term in Years</u> – Contains the number of years for which the limited term license will be issued.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

51. <u>Instruction Permit Date</u> – Contains the month (MM) and year (YY) the last instruction permit was issued.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

52. <u>Instruction Permit Class</u> – Contains the class of license for which the instruction permit was issued.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

53. <u>Temporary License Date</u> – Contains the month (MM) and year (YY) the temporary/interim license was issued.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

54. <u>Temporary License Class</u> – Contains the class of license for which the temporary/interim license was issued.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

55. <u>Previous Incomplete Application Reason Code</u> – Contains a code representing the reason a prior application was incomplete.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

56. <u>PD Indicator</u> – Contains an indicator that means that the Problem Driver Pointer System (PDPS) inquiry is questionable and requires further investigation because a response was received on a PDPS inquiry and the name and/or birth date on the transaction was subsequently changed.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

57. <u>Military Extension Code</u> – Contains a code indicating that the expiration date of the license has been extended because the licensee is in the military.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

58. <u>INS Document Expiration Date</u> – Contains the expiration date of the Immigration and Naturalization Service document that was presented as proof of legal presence.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

59. <u>SSN Verified Code</u> – Contains a code representing how the applicant's social security number was verified.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

60. <u>Social Security Number</u> – Contains the applicant's social security number.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

61. <u>MAG Stripe sequence Number</u> – Contains a sequence number assigned by the video capture station (VCS) for each photo taken.

   ❑ MAJOR   ❑ MODERATE   ❑ MINOR   ❑ NONE

62. <u>Application After Legal Presence Stage III</u> – Contains an indicator representing that the application was started after implementation of Legal Presence Stage III.

❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

63. <u>Last Processing Date</u> – Contains the date the application was last updated.

❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

64. <u>Motorcycle Training</u> – Contains a code representing whether a minor has a motorcycle training certificate.

❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

65. <u>INS Document Number Prefix</u> – Contains the prefix to the number that was on the INS document presented as proof of legal presence.

❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

66. <u>INS Document Number</u> – Contains the number that was on the INS document presented as proof of legal presence.

❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

67. <u>INS Inquiry Indicator</u> – Contains an indicator that represents the status of the Immigration and Naturalization Services Inquiry.

❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

68. <u>ASVI Check Bypass Indicator</u> – Contains an indicator that represents an inquiry to INS to be bypassed during the DMVA Application Process because the inquiry will be performed through other on-line verification methods.

❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

69. <u>Legal Presence Limited Term Indicator</u> – contains an indicator that represents that the license is to be issued as a limited term because the Legal Presence Document expires prior to the full term of the driver license.

❏ MAJOR   ❏ MODERATE   ❏ MINOR   ❏ NONE

Part II - Feasibility of Capturing the Desired Data

What is your opinion on the general data processing and programming requirements for capturing and storing the complete DL pending application subrecord?

B

Part III - Other Data Items and Systems

Please identify any other driver license process information on the Driver License Master File or other available electronic or hard copy sources that in your opinion might be of value to include in the proposed database or that might be available as a supplement to the database information.

Part IV - Utility and Value

Please comment on the increased utility and value that the proposed DL Application MIS would provide to each of the following applications:

Evaluation of licensing program operations:

Traffic safety research studies:

Problem-driver identification:

Workload evaluation:

Resource allocation:

Reporting of demographic information to other state agencies (Department of Finance, etc.):

Other (Please specify):

Part V - Comments

Please share any additional insights or opinions that you may have.

APPENDIX C

DEVELOPMENT OF A DRIVER LICENSE APPLICATION MANAGEMENT INFORMATION SYSTEM SURVEY SECOND QUESTIONNAIRE

Part I - Summary of First Survey

Determining Data Usefulness. In this section, the advisory committee members were asked to assess and rate the potential usefulness of the individual variables from the DL Pending Application Subrecord. Respondents indicated that the majority of the variables would be useful for traffic safety research, licensing program administration, and resource allocation.

Feasibility of Capturing the Desired Data. It was noted by a majority of the respondents that the DL Pending Application Subrecord contains all of the necessary information to obtain a complete history of the field office license issuance activity. However, the historical information on the complete application process is lost when a driver is either issued a permanent driver license or a new application is started. A number of respondents indicated that retaining prior application data, such as the number of failed driving tests, would assist field office staff in determining whether action should be taken against the customer's driving privilege. In addition, several members stated that capturing and storing these data would aid in fraud investigations as well as in communicating to courts the expiration status of a temporary license.

In terms of the general processing and programming requirements, the consensus of the respondents was that capturing and storing the data in an "off-line" dataset is very achievable. Currently, the entire DL application transaction is stored in a data warehouse residing at Teale Data Center. The information contained in the warehouse is used to create the DL Pending Application on the DL Master File. Two viable options for capturing and storing the data emerged from the respondents.

The first option is to utilize the existing daily journals. The daily journal records every original and renewal DL transaction (e.g., builds a new DL record, updates an existing DL record) that is entered in the field office by way of a Series 1 or RS6000 terminal. Following the completion of the transaction, the information is written to the Pending DL Subrecord. One record is created in the journal for each transaction. The transaction information from the daily journals could be copied and stored off-line for use in constructing the DL Application MIS database.

The second option is to utilize an imaging process directly from the DL Master File. This option would produce an off-line record for a driver each time a DL Pending Application Subrecord is created. Subsequent application transactions would be written to the off-line data set when the imaging process detects a change (i.e., modification/ completion of the existing application or creation of a second or subsequent application) to any segment of the DL Master's Pending Application Subrecord.

Several respondents suggested potential database models. One possible model suggested was a hierarchical database. The hierarchical database would contain for each applicant a header record (fields identifying the individual driver) and a detail record (one detail record for each application transaction). Each record of the hierarchical data set would contain a field that identifies whether it is a header record or a detail record. A second possible model suggested was a relational data set. The relational data set could conceivably be organized with the DL number, social security numbers, and date of birth as primary keys. The relational database would contain a number of tables, each containing a subset of application information. Data for an individual could be brought together from the various tables using the key identifier.

Other Data Items. Most of the committee members recommended other available electronic or hard copy sources that could supplement the proposed database. For example, it was noted that many Driver Safety Branch reexaminations, hearings, and interviews are scheduled and held between DL renewal periods. Currently, there is no DL pending application on which to electronically record a Driver Safety requested drive test result. Additionally, it was recommended that the current application subrecord be modified to include the actual written/drive test scores rather than maintaining the current system of recording a pass/failure indicator on the application subrecord. Respondents noted that capturing Driver Safety testing data would be useful when determining whether to authorize additional driving tests or in taking a licensing action when, for example, evaluating lack of skill and lack of knowledge cases.

It was also suggested that a field be created in which the date of issuance for a second or subsequent instruction permit or temporary driver license would be recorded. The current system only displays the date of initial document issuance. Similarly, a recommendation was proposed in which the number of days in which a temporary DL is valid be recorded to aid field office personnel.

Several respondents stated the desirability of incorporating information on physical and mental medical conditions as well as recording physical descriptors for a driver receiving an "X" DL prefix record.

Utility and Value. The central theme of comments about the utility and value was that any data incorporated into the proposed database that would impact DMV's ability to provide information to internal and external users would be beneficial.

For example, it was noted that the proposed database could assist in determining whether procedurally required restrictions, limited term status, suspensions, or revocations are being imposed. This information would be of value for research studies in such topical areas as DUI, negligent operators, fraud, lack of skill and knowledge, driver age, and safety.

A number of respondents indicated that the proposed MIS database would enhance problem driver identification. Specifically, the captured application history data would provide valuable information for hearing officers who conduct reexaminations and hearings.

Several committee members stated that the proposed database could aid in providing more efficient, less costly, and more timely information to both the customers and to departmental staff, resulting in better resource allocation. For example, one respondent noted that if driving test, written test, and vision test volumes are captured by the three-digit field office reporting unit number, employee staffing resource issues may be more easily resolved.

Part II - Proposed Initial System Design

Data sources. The proposed system will capture licensing and biographical information contained within the automated Driver License Master File. The majority of the information will be captured from the Basic and E-4-Pending Driver License Application subrecords.

Time period. The system will be organized into an longitudinal data base of driver license application histories. We are proposing that the complete application history prior to completion of licensure be maintained for each driver license applicant entering into the system. After that, the records would be stored in an archive data file that could be retrieved for tracking over multiple license issuances.

Proposed contents. The driver license application records might contain the following items for each transaction:

```
Driver License Number                   Birth Century
Social Security Number                  Latest License Class
Gender                                  Eye Color
Date of Birth                           Hair Color
Date of Original Licensure in California Height
Latest License Issuance Type            Weight
Latest License Issuance Date            P&M Code
License Issuance Type No. 1             Drivers Name
License Issuance Date No. 1             AKA
License Issuance Office No. 1           Mailing Address
License Issuance Type No. 2             Resident Address
License Issuance Date No. 2             Zip Code
License Issuance Office No. 2           County of Residence
License Issuance Type No. 3             Endorsement Code 1
License Issuance Date No. 3             Endorsement Code 1 Date
License Issuance Office No. 3           Endorsement Code 2
License Issuance Type No. 4             Endorsement Code 2 Date
License Issuance Date No.4              Endorsement Code 3
License Issuance Office No. 4           Endorsement Code 3 Date
License Issuance Type No. 5             Endorsement Code 4
License Issuance Date No.5              Endorsement Code 4 Date
License Issuance Office No. 5           Commercial Endorsement 1
License Issuance Type No. 6             Commercial Endorsement 2
License Issuance Date No 6              Commercial Endorsement 3
License Issuance Office No.6            Commercial Endorsement 4
```

Incomplete Application Reason Code

Office ID

Work Date (MMDDYY)

Cashier ID

Sequence No.

Type of Transaction Code

Application Date (MMDDYY)

Update Employee ID

No Fee Reason Code

Original/Non-Original Indicator

Minor Guarantor Code

MAG Office #

MAG Stripe

MAG Date (MMDDYY)

Legal Presence Temporary

Legal Presence Indicator

Legal Presence Employee #

Legal Presence Limited

Legal Presence Phase III

Driver Class

Motorcycle Endorsement

Written/Drive Test Indicator

Problem Driver Point System Inquiry Indicator

Problem Driver Point System Eligibility Indicator

Driver Education

Driver Training

Out of State Name Abbreviation

Out of State License Number

Out of State License Type

Vision Test Results

Oral Test Indicator

Foreign Language

Sign Test 1 Results

Sign Test 2 Results

Sign Test 3 Results

Words/Phrases Test 1 Results

Words/Phrases Test 2 Results

Words/Phrases Test 3 Results

DL Pending Eligibility Renewal Term

Law Test 1 Class F Test Results

Law Test 2 Class F Test Results

Law Test 3 Class F Test Results

Law Test 1 Class M Test Results

Law Test 2 Class M Test Results

Law Test 3 Class M Test Results

Last Law Test Fail Date (MMDD)

Motorcycle Skill Test 1 Results

Motorcycle Skill Test 1 Fail Date (MMDD)

Motorcycle Skill Test 1 Examiner ID

Motorcycle Skill Test 2 Results

Motorcycle Skill Test 2 Fail Date (MMDD)

Motorcycle Skill Test 2 Examiner ID

Motorcycle Skill Test 3 Results

Motorcycle Skill Test 3 Fail Date (MMDD)

Motorcycle Skill Test 3 Examiner ID

Non Commercial Drive Test 1 Class

Non Commercial Drive Test 1 Results

Non Commercial Drive Test 1 Fail Date (M

Non Commercial Drive Test 1 Examiner ID

Non Commercial Drive Test 2 Class

Non Commercial Drive Test 2 Results

Non Commercial Drive Test 2 Fail Date (M

Non Commercial Drive Test 2 Examiner ID

Non Commercial Drive Test 3 Class

Non Commercial Drive Test 3 Results

Non Commercial Drive Test 3 Fail Date (M

Non Commercial Drive Test 3 Examiner ID

Restriction 1 of 5

Restriction 2 of 5

Restriction 3 or 5

Restriction 4 of 5

Restriction 5 of 5

Attachment 1 of 5

Attachment 2 of 5

Attachment 3 of 5

Attachment 4 of 5

Attachment 5 of 5

Limited Term Fee Due Year

Limited Term in Years

Instruction Permit 1 Date (MMDD)

Instruction Permit 1 Class

Temporary License 1 Date (MMDD)

Temporary License 1 Class

Previous Incomplete App Reason Code

Problem Driver Point System Inquiry Ques Indicator

Military Extension Code

Motorcycle Training

<u>Organization</u>

The organization of the data in the proposed system has not yet been decided. However, among the structures under consideration are the following two possibilities:
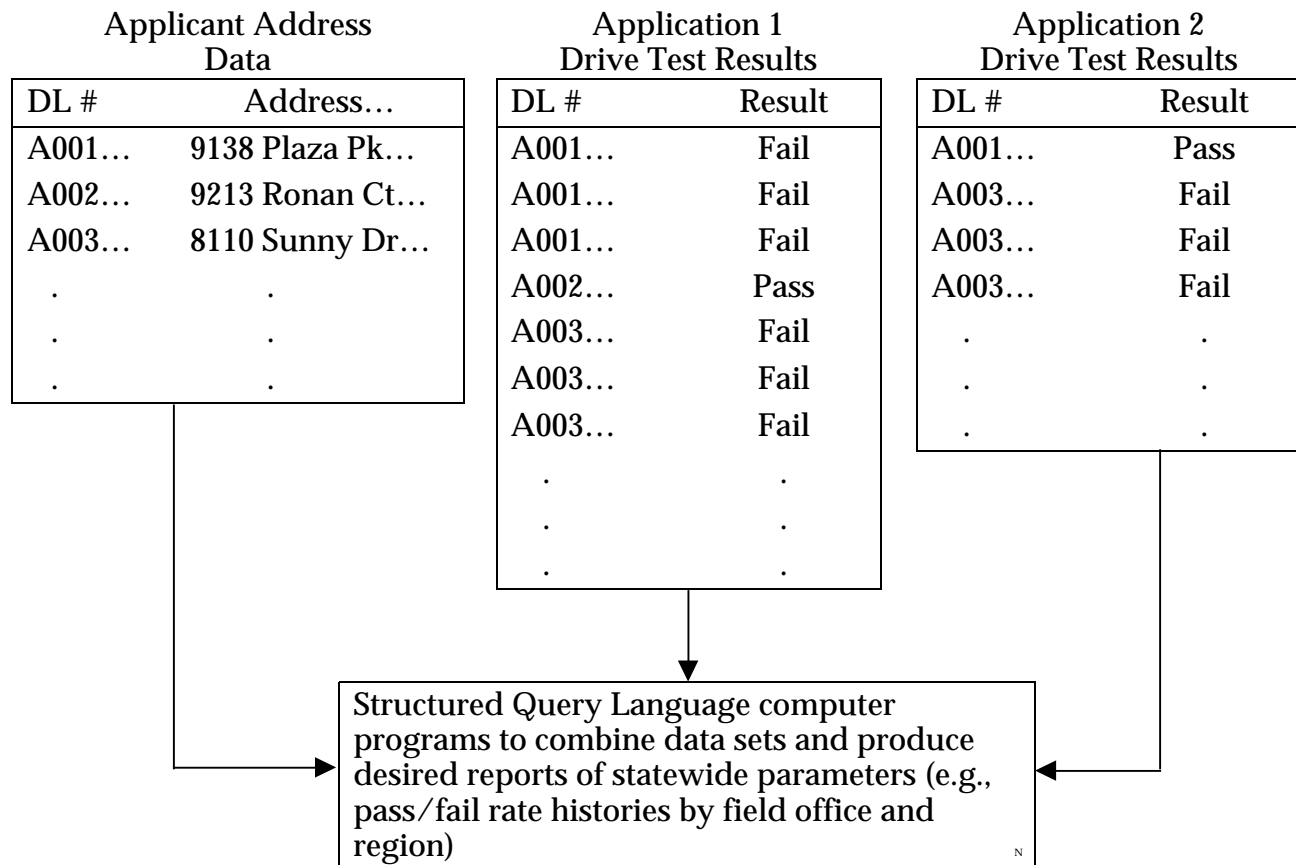
6. **Hierarchical data sets**: The structure of a hierarchical file consists of the following for each individual:

   - A header record
   - One or more related detail records

HIERARCHICAL FILE

Header

Detail

Detail

Header

Detail

Header
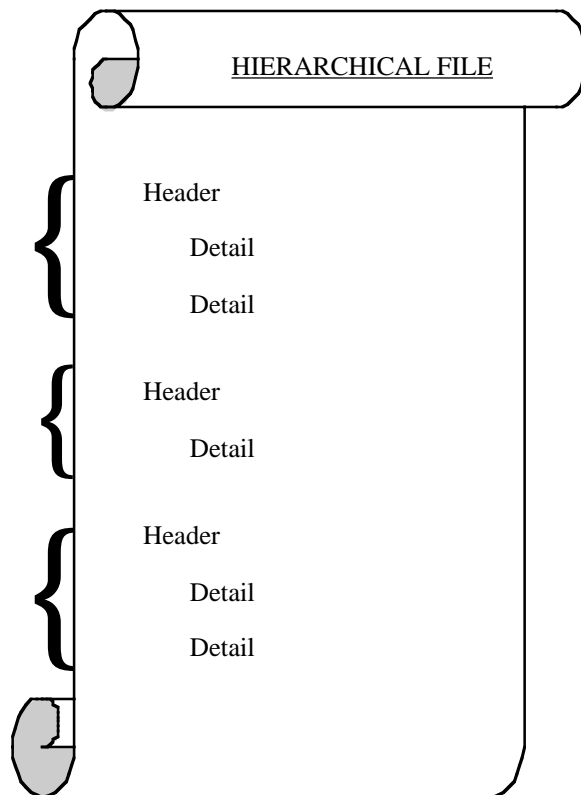
Detail

Detail

Typically, each record in a hierarchical file contains a field that identifies whether it is a header record or a detail record. In the proposed data base, the header record will consist of information (DL #, SSN, date of birth) identifying and linking an individual to his/her application history. The detail record will contain the detailed information pertaining to each DL application activity transacted by an individual.

The hierarchical structure of the data will facilitate the construction of summary variables and data sets (e.g., pass/fail rate histories by field office and region) available for users.

2. **Relational data sets**: Relational data sets contain variables in separate data sets (tables) that can be merged (joined) with a common identifier key (e.g., driver license number).

Applicant Address Data	
DL #	Address…
A001…	9138 Plaza Pk…
A002…	9213 Ronan Ct…
A003…	8110 Sunny Dr…
.	.
.	.
.	.

Application 1 Drive Test Results	
DL #	Result
A001…	Fail
A001…	Fail
A001…	Fail
A002…	Pass
A003…	Fail
A003…	Fail
A003…	Fail
.	.
.	.
.	.

Application 2 Drive Test Results	
DL #	Result
A001…	Pass
A003…	Fail
A003…	Fail
A003…	Fail
.	.
.	.
.	.

Structured Query Language computer programs to combine data sets and produce desired reports of statewide parameters (e.g., pass/fail rate histories by field office and region) N

The primary value and intended use of the DL application system will be in providing summary and aggregated information on licensing process activity throughout the state rather than as a source of license decision-making information for individual license applicants. The proposed database will provide data for study purposes such as evaluation of driver licensing programs, driver competency, and monitoring driver licensing operations.

Documentation
We anticipate developing detailed data set documentation if a decision is made to implement the system. The documentation will be available to all users and information requestors.

Part III - Survey Questions

In the boxes below are questions asking your opinions regarding the content and structure of the proposed Driver License Application Management Information Database. Feel free to mark on the questionnaire, circle or strike through elements, and write any comments on the front and back.

Would your office be likely to request driver license application data as conceptualized for the proposed system? Please describe briefly the nature and frequency of the requests you might make.

Are there any additional data elements that you would like added to the proposed system?

If the proposed system is developed, we plan on merging the application data with prior and subsequent driver record histories (i.e., crashes, citations, etc.). Would your office be interested in reports emanating from these additional data?

We are considering collecting data for only a sample of individuals rather than for the entire applicant population. Would the collection of only a sample of applicants negatively impact any potential use of these data by your office?

Please share any insights/advice or alternative ideas you have about the two database structures (i.e., hierarchical and relational data sets) presented on pages 5 and 6).

Do you believe that the proposed system would still be of value to your office if it was used to generate summary statistical reports rather than information on individual drivers?

Please provide additional comments as desired. Attach additional pages if necessary.